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# CURRENT LITERATURE.

## BOOK REVIEWS.

### Evolution.

A COMPREHENSIVE account of the subject of evolution is at present a matter of considerable importance, but at the same time must be one of unusual difficulty because of the great activity incited by the work of DE VRIES and others who have within the last few years undertaken the study of variation, adaptation, and heredity by experimental methods. Dr. J. P. LOTS<sup>1</sup> has undertaken this most difficult task by the publication of a volume of lectures upon theories of descent with special reference to the botanical side of the question. He follows the method not infrequent among older writers but rare among writers of recent scientific works, of beginning at the beginning. He first considers the nature of knowledge, and the supposed conflict between science and religion, pointing out that evolution will not explain everything, and that there is no conflict between religion and science except as either or both attempt to explain dogmatically the unexplainable. Both science and religion come to the same conclusion when traced to their limit, namely, that there is a fundamental mystery incapable of investigation because none of the possible alternatives is even conceivable to the human mind.

After these two introductory lectures, one lecture is devoted to evolution in general, beginning with the origin of the earth, the evolution of minerals, the origin of life, and the relation of form to environment. Two lectures deal with the morphogenic stimuli and the various theories of direct response and adaptation. The views of REINKE and KLEBS are contrasted, and those of LAMARCK, SPENCER, NÄGELI, and WARMING are compared. Here the author gives a well-deserved appreciation of the work of LAMARCK, though he is not himself in any proper sense a Lamarckian. The subject of heredity is considered in six lectures, dealing first with the older theories of SPENCER, DARWIN, NÄGELI, and WEISMANN, which were of a purely hypothetical nature, and then taking up the development of our knowledge of chromosomes as the bearers of heredity. One whole lecture is devoted to MENDEL and his laws, two to variation curves and GALTON's laws of inheritance, and one to numerous subsidiary questions, such as dominance and blending, atavism, cryptomery, pleiotypy, half races, etc., and one to the inheritance of acquired characters.

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<sup>1</sup> LOTS<sup>1</sup>, J. P., Vorlesungen über Descendenztheorien mit besonderer Berücksichtigung der botanischen Seite der Frage, gehalten an der Reichsuniversität zu Leiden. Erster Teil. 8vo. pp. xii+384. *pls.* 2. *figs.* 124. Jena: Gustav Fischer. 1906. *M* 8; *geb.* *M* 9.

Discontinuous variation and mutation are treated in three lectures, and the six remaining lectures trace the history of the evolution idea from ARISTOTLE to DARWIN, the last lecture being devoted to the life of the latter.

A treatise on contemporaneous science is fraught with the same difficulties as attend the writing of contemporaneous history. A just estimate of the importance of the latest developments in either case only becomes possible in the light of subsequent development, and consequently a book of this kind might be expected to have a very evanescent value. LOTSY has avoided very much of this by taking a judicial attitude and treating his subject historically. He has depended to a very large extent upon quotations from the various scientists whose views or results he has presented, and this gives the reader something of the unpleasant sensation always given by a so-called "digest;" but his choice of quotations is good and his own language is simple and direct, and therefore easily followed.

A second volume is promised, in which is to be indicated the work still to be done, and this will be awaited with much interest, for it will be here that we may hope to gain more of the personality of the author. The present volume is exceptionally impersonal, and both gains and loses by this fact. If the second volume takes on the strength and virility of personal enthusiasm which incites to investigation, the lack of such qualities in this first volume may not be looked upon as a disadvantage. But even if it should indicate in the same dispassionate manner that characterizes this book, the problems awaiting solution, he will deserve the gratitude of every biologist. While this book can not be said to *fill* the need that called it forth, it is gratifying that the first attempt at filling it is so excellent. As the first comprehensive work dealing with the more recent phases of evolutionary study it should at once gain a deservedly large circulation.—GEORGE H. SHULL.

#### Chemistry of plants.

THE second volume of CZAPEK'S *Biochemie der Pflanzen* is a huge one,<sup>2</sup> and deepens the impression made by the first volume of the immense labor which such a compilation represents, and the equally immense service which the author has rendered to science in its preparation. For knowledge of the chemistry of plants has lagged far behind that of animals, which, under the stimulus of human relations through medicine, has been under constant investigation by many students.

This volume is devoted to (1) the proteids and their metabolism in various plants (bacteria and fungi, mosses, algae, seeds, buds, leaves, roots, pollen grains) including the formation, absorption, and regeneration of proteids by various parts and under various conditions; (2) the nitrogenous end products of metabolism, including purin bases, glucosides yielding HCN, and alkaloids;

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<sup>2</sup> CZAPEK, F., *Biochemie der Pflanzen*. Zweiter Band. 8vo. pp. xii+1027. Jena: Gustav Fischer. 1905. *M* 25.